TAIT & ASSOCIATES, INC.

Fax Cover Sheet

Full Service Civil Engineering, Surveying & Environmental

DATE: 10/25/96

TO: McDonnell Douglas Realty Co.

ATTN: Mr. Merle Pautsch

FROM: Bill Keller FAX #: 310 627-3109

SUBJ: Harbor Gateway Center

Los Angles, CA

JOB #: SP 3289

We are transmitting 4 pages, including this cover sheet.

Comments:

Crushing specifications from NorCal and copy of Section 200-2.4.2 from "Standard Specifications for Public Works Construction"

If this transmission appears incomplete or incorrect, please notify our office immediately. Thank you.

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October 25, 1996 Project Number 5936-96

McDonnell Douglas Realty Company
4060 Lakewood Boulevard
Lakewood, California 90808

Attn: Mr. Merle Pautsch

RE: Crushed Miscellaneous Base Material Specifications - Proposed Harbor Gateway Center - Located at the Southwest Corner of Normandie Avenue and 190th Street, in the City of Los Angeles, California

Dear Mr. Pautsch:

Pursuant to the request of Mr. Bill Keller, Tait and Associates, the following information is provided.

Crushed miscellaneous base materials generated on site shall conform to Standard Specifications for Public Works Construction (Green Book), Section 200-2.4.2, "fine" designation.

We appreciate this opportunity to be of service to you. If you have any further questions, please do not hesitate to contact the undersigned.

Respectfully submitted,
NORCAL ENGINEERING

Keith D. Tucker
Project Engineer
R.G.E. 841

REGISTERED PROFESSIONAL ENGINEER
KEITH D TUCKER
No. 841
Exp. 12-31-96
GEOTECHNICAL
STATE OF CALIFORNIA

Troy D. Norrell
President

200-2 UNTREATED BASE MATERIALS

200-2.1 General. Materials for use as untreated base or subbase shall be classified in the order of preference as follows:

Crushed Aggregate Base or Crushed Slag Base

Crushed Miscellaneous Base

Processed Miscellaneous Base

Select Subbase

When base material without further qualification is specified, the Contractor shall supply crushed aggregate base or crushed slag base. When a particular classification of base material is specified, the Contractor may substitute any higher classification, following the order of preference listed above, of base material for that specified. All processing or blending of materials to meet the grading requirement will be performed at the plant or source. The materials shall compact to a hard, firm, unyielding surface and shall remain stable when saturated with water.

200-2.2 Crushed Aggregate Base.

200-2.2.1 General. Crushed aggregate base shall consist entirely of crushed rock and rock dust conforming to the requirements of 200-1.1 and 200-1.2.

200-2.2.2 Grading. The aggregate shall be uniformly graded and shall conform to the following gradation:

TABLE 200-2.2.2 (A)

Sieve Size	Percentage Passing Sieve
1½"	100
¾"	90-100
⅜"	50-80
No. 4	35-55
No. 30	10-30
No. 200	2-9
ASTM C 131 Test Grading	B

200-2.2.3 Quality Requirements. The material shall conform to the following: *(See Table 200-2.2.3(A) on next page)*

The Engineer may waive percentage wear and specific gravity requirements, provided that the material has a minimum durability of 40 in accordance with Calif. Test 229.

TABLE 200-2.2.3 (A)

Tests	Test Method No.	Requirements
R-Value[1]	Calif. 301	80 Min.
Sand Equivalent	Calif. 217	50 Min.
Percentage Wear	ASTM C 131	
100 revolutions		15 Max.
500 revolutions		52 Max.
Specific Gravity (Bulk saturated surface dry)	ASTM C 127	2.58 Min.[2]

1. The R-Value requirement will be waived, provided the material has an SE of 55 or more.
2. Not more than 15 percent by weight shall be particles with a bulk specific gravity below 2.50.

200-2.3 Crushed Slag Base.

200-2.3.1 General. Crushed slag shall consist entirely of slag formed as a byproduct of the blast furnace or steel furnace operation in the production of iron or steel and shall otherwise conform to requirements in 200-1.1 and 200-1.2.

200-2.3.2 Grading. The slag shall be uniformly graded and shall conform to the following gradations:

TABLE 200-2.3.2 (A)

Sieve Size	Percentage Passing Sieve
1½"	100
¾"	90-100
⅜"	50-80
No. 4	35-55
No. 30	10-30
No. 200	2-9
ASTM C 131 Test Grading	B

When there is a difference in specific gravity (bulk saturated surface dry per ASTM C 127) of 0.2 or more between that portion retained and that portion passing a No.4 sieve the grading will be modified by Calif. Test 105.

200-2.3.3 Quality Requirements. The materials shall conform to Table 200-2.3.3 (A).

The Engineer may waive percentage wear and specific gravity requirements provided that the material has a minimum durability of 40 in accordance with Calif. Test 229.

TABLE 200-2.3.3 (A)

Tests	Test Method No.	Requirements
R-Value[1]	Calif. 301	80 Min.
Sand Equivalent	Calif. 217	50 Min.
Percentage Wear	ASTM C 131	
100 revolutions		15 Max.
500 revolutions		52 Max.
Specific Gravity (Bulk saturated surface dry)	ASTM C 127	2.10 Min.

1. The R-Value requirement will be waived, provided the material has an SE of 55 or more.

200-2.3.4 Placing and Aging. Crushed slag base shall not be placed closer than 12 inches, measured in any direction, to any metal pipe or structure. When, upon preparation of the subgrade, it becomes apparent that any such pipes (including metal utility lines) encroach upon the 12-inch-minimum distance, crushed aggregate base or processed miscellaneous base as shown on the Plans will be required for that portion adjacent to the pipe or structure. If it can be determined that a metal utility pipe has cathodic protection or a bituminous coating, the 12-inch distance will be waived.

Unless otherwise authorized by the Engineer, steel slag shall not be used for base until it has been crushed to the grading requirements of 200-2.3.2 and then control aged in stockpiles in accordance with current California Department. of Transportation requirements.

200-2.4 Crushed Miscellaneous Base.

200-2.4.1 General. Crushed miscellaneous base shall consist of broken and crushed asphalt concrete or portland cement concrete and may contain crushed aggregate base or other rock. The material shall be free of any detrimental quantity of deleterious material as defined in 200-1.1. Material retained on the No. 4 sieve shall contain no more than 15 percent gravel particles as defined in 200-1.3.

200-2.4.2 Grading. The material shall be uniformly graded and shall conform to one of the following gradations:

TABLE 200-2.4.2 (A)

Sieve Size	Percentage Passing Sieve	
	Coarse	Fine
2"	100	
1½"	85-100	100
¾"	58-78	85-100
⅜"		55-75
No. 4	27-47	30-50
No. 30		12-28
No. 200	2-12	2-10
ASTM C 131 Test Grading	A	B

When there is a difference in specific gravity (bulk saturated surface dry per ASTM C 127) of 0.2 or more between that portion retained and that portion passing a No. 4 sieve, the grading will be modified by Calif. Test 105.

200-2.4.3 Quality Requirements. This material shall conform to the following:

TABLE 200-2.4.3 (A)

Tests	Test Method No.	Requirements
R-Value[1]	Calif. 301	80 Min.
Sand Equivalent	Calif. 217	35 Min.
Percentage Wear	ASTM C 131	
100 revolutions		15 Max.
500 revolutions		52 Max.

1. The R-Value requirement may be waived, provided the material has an SE of 40 or more.

The Engineer may waive the percentage wear requirements, provided the material has a minimum durability of 40 in accordance with Calif. Test 229.

200-2.4.4 Noise and Dust Control. Crusher operations on or adjacent to the project site shall be limited to hours between 7 a.m. and 6 p.m. A fiber mat, rug padding or other acoustical muffling material shall be used to reduce noise originating from the crushing operations to a tolerable level. Water spray bars shall be operated in such a manner to minimize the emission of dust to a tolerable level.

200-2.5 Processed Miscellaneous Base.